

इंटरनेट

मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

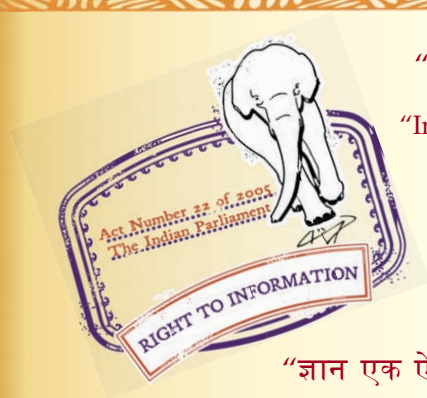
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 4948 (2002): welded steel wire fabric for general use
[MED 10: Wire Ropes and Wire Products]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
सामान्य उपयोग के लिए वेल्डित
इस्पात तार फैब्रिक — विशिष्टि
(दूसरा पुनरीक्षण)

Indian Standard
WELDED STEEL WIRE FABRIC FOR
GENERAL USE — SPECIFICATION
(*Second Revision*)

ICS 77.140.55

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by Builders Hardware Sectional Committee had been approved by the Civil Engineering Division Council.

This standard was first published in 1968 and revised in 1974. The second revision of this standard has been taken up to incorporate changes in the standard found necessary in the light of developments that has taken place in the field. Important changes made in this revision are :

- a) Use of stainless steel wire has been included.
- b) Amendments No. 1 and 2 issued to the standard earlier has been incorporated.
- c) Requirements for finish of wire have been modified.

The composition of the Committee responsible for formulation of this standard is given in Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*). The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

WELDED STEEL WIRE FABRIC FOR GENERAL USE — SPECIFICATION (*Second Revision*)

1 SCOPE

1.1 This standard covers requirements for welded steel wire fabric for general use, such as fencing, window grill and crates.

1.2 This standard is not intended to cover welded wire fabric for concrete reinforcement (*see* IS 1566).

2 REFERENCES

The Indian Standards given below contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards.

<i>IS No.</i>	<i>Title</i>
280 : 1978	Mild steel wire for general engineering purposes (<i>third revision</i>)
1477	Code of practice for painting of ferrous metals in buildings :
(Part 1) : 1971	Pretreatment (<i>first revision</i>)
(Part 2) : 1971	Painting (<i>first revision</i>)
1566 : 1982	Hard drawn steel wire fabric for concrete reinforcement (<i>second revision</i>)
6528 : 1995	Stainless steel wire — Specification (<i>first revision</i>)

3 TERMINOLOGY

For the purpose of this standard, the following definition shall apply:

3.1 Welded Wire Fabric

A material composed of mild or stainless steel wire as drawn, fabricated into sheet (or mesh) formed by the process of electric welding. The finished material shall consist essentially of a series of longitudinal and transverse wires arranged substantially at right angles to each other and then welded together at all points of intersection.

4 MATERIALS

4.1 Mild steel wire used for the manufacture of welded fabric shall conform to IS 280.

4.2 Stainless steel wire used for the manufacture of welded fabric shall conform to grade X 04 Cr 17 Ni 12 Mo 2 or X 04 Cr 18 Ni 10 of IS 6528.

5 MANUFACTURE OF MESH

5.1 Assembling of Wires

The wire shall be assembled by automatic machines or by other suitable mechanical means which will assure accurate spacing and alignment of all members of the finished fabric within specified tolerances (*see* 6.5).

5.2 The longitudinal and transverse wires shall be securely connected at every intersection by a process of welding.

5.3 It shall be fabricated and finished in a workman like manner and shall be free from injurious defects.

5.4 Spacing of Longitudinal and Transverse Wires

Spacing and arrangement of wire and dimensions of units in flat sheets or rolls shall conform to the requirements specified by the purchaser.

NOTE — The mesh sizes and sizes of wire for square as well as for oblong welded wire fabric for general use being commonly manufactured in the country are given in Annex A for information.

5.5 Tolerance of Size of Mesh

In any individual mesh, the maximum variation between two members when measured between centre to centre shall not vary more than 5 percent.

5.6 Tolerance of Size of Sheet or Roll

The length of flat sheets or rolls measured on any wire may vary by 25 mm or one percent whichever is greater.

6 TEST FOR WELDING

6.1 In order to ensure adequate weld shear strength between longitudinal and transverse wire, a weld shear test as described in 7.1.1 shall be made. The minimum average value of the weld shall not be less than 21 kg/mm² and the area of the wire to be taken into consideration for calculation is the longitudinal wire. The fabric having a diameter difference between the longitudinal and transverse wire greater than 2 mm shall not be subjected to the weld shear test.

6.1.1 Procedure for Test

The test shall be conducted using a fixture of suitable design which will prevent rotation of the transverse wire. The transverse wire shall be placed in the anvil of the testing device which is secured in the tensile machine and the load then applied to the longitudinal wire. Four welds selected at random from specimen representing the entire width of the fabric, exclusive of the selvage wire, shall be tested for weld shear strength.

NOTE — A suitable device for testing of weld strength is given in Fig. 1.

6.1.2 One weld shear test (see 7.1.1) shall be conducted on fabric at every 30 000 m² of fabric manufactured.

7 SAMPLES AND NUMBER OF TESTS FOR TENSILE STRENGTH, BEND TEST AND PERCENTAGE ELONGATION

7.1 Samples

The samples shall be taken from the wire used before fabrication or after fabrication of mesh.

7.2 Number of Tests

Number of tests shall be as under:

- a) When the tests are done on drawn wire before fabrication the frequency of the test shall be one test of each on every 10 or part of 10 coils.
- b) When the test is done on fabric, one test of each shall be done on every 7 000 m² of fabric.

NOTE — The tests for tensile strength and percentage elongation shall be done on the wire before fabrication.

8 BUNDLING

8.1 When the fabric is finished in flat sheets, it should be assembled in bundles of convenient size containing not more than 150 sheets, and securely fastened. Sheets may be supplied without bundling, if it is so agreed to between the manufacturer and the purchaser.

8.2 When the fabric is finished in rolls, each roll shall be secured so as to prevent unwinding and telescoping during shipment, and handling. The ends of the wire of the bundle shall be tied with soft wire so that the material do not get damaged during transportation.

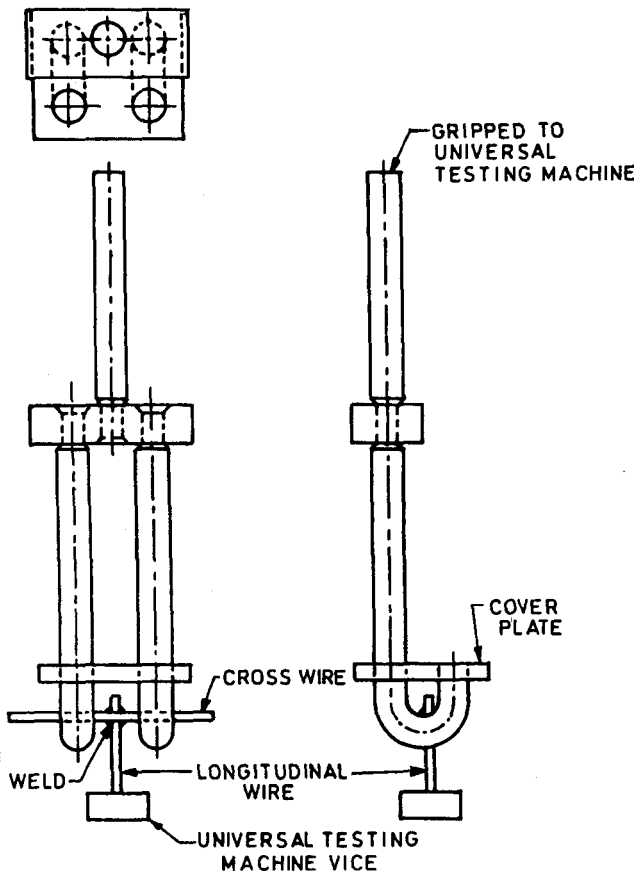


FIG. 1 TYPICAL TESTING DEVICE FOR TESTING WELD SHEAR STRENGTH

9 MARKING

9.1 Each bundle shall be provided with the following information:

- Name or trade-mark of the manufacturer;
- Description of the material;
- Code, if any;
- Size of mesh;
- Wire diameter use for longitudinal and transverse wire;
- Width and length of the welded steel wire fabric; and
- Any other information as specified by the purchaser.

9.2 The information to be supplied by the purchaser is given in Annex B.

9.3 BIS Certification Marking

The material may also be marked with the BIS Standard Mark.

9.3.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

10 FINISH

10.1 All the surface of wire fabric, shall be cleaned free of rust, mill scale, dirt, oil, etc.

10.2 If required by the purchaser, the mild steel wire may be given suitable anti corrosive treatment such as pickling followed by painting, phosphating and painting [see IS 1477(Parts 1 and 2)], hot dip galvanizing etc.

ANNEX A

(Clause 5.4)

MESH SIZES AND WIRE SIZES COMMONLY AVAILABLE IN THE COUNTRY

A-1 SQUARE MESH

Sl No.	Mesh Size, Nominal Pitch of Wire	Diameter of Wire Each Way
	mm	mm
1	15	1.60
2	20	2.00
3	20	2.50
4	20	3.15
5	25	2.00
6	25	2.50
7	25	3.15
8	37	2.50
9	37	3.15
10	50	2.50
11	50	3.15
12	50	3.55
13	50	4.00
14	50	4.50
15	75	2.50
16	75	3.15
17	75	3.55
18	75	4.00
19	75	4.50
20	75	5.00
21	75	5.60

A-2 OBLONG MESH

Sl No.	Mesh Size, Nominal Pitch of Wire		Diameter of Wire Each Way	
	Longi- tudinal	Trans- verse	Longi- tudinal	Trans- verse
	mm	mm	mm	mm
1	50	25	2.50	2.50
2	50	25	3.15	3.15
3	50	25	3.55	3.55
4	50	25	4.00	4.00
5	50	25	4.50	4.50
6	75	25	3.15	3.15
7	75	25	3.55	3.55
8	75	25	4.00	4.00
9	75	25	4.50	4.50
10	75	25	5.00	5.00
11	75	25	5.00	3.15
12	75	50	3.15	3.15
13	75	50	3.55	3.55
14	75	50	4.00	4.00
15	75	50	4.50	4.50
16	75	50	5.00	5.00
17	75	50	5.60	5.60
18	75	50	5.00	3.15
19	75	50	5.60	3.15
20	75	50	5.60	3.55

ANNEX B

(Clause 9.2)

INFORMATION TO BE SUPPLIED BY THE PURCHASER

B-1 The following information is to be supplied by the purchaser to the manufacturers

- a) Diameter and material of the wire,
- b) Size of mesh (centre to centre distance bothways), and
- c) Total width and length required.

ANNEX C**(Foreword)****COMMITTEE COMPOSITION****Builders's Hardware Sectional Committee, CED 15**

<i>Organization</i>	<i>Representative(s)</i>
In personal capacity (103, Charak Sadan Vikas Puri, New Delhi)	SHRI P. KRISHNAN (<i>Chairman</i>)
Allied Anodisers, Kolkata	SHRI SUSHIL TAWAR
Appex Association of DDA Colonies, Delhi	SHRI R. P. AGRAWAL SHRI S. K. DHAWAN (<i>Alternate</i>)
Argent Industries, New Delhi	SHRI ANIL CHADHA
Balaji Enterprises, New Delhi	SHRI ADITYA KIRAN AGGARWAL
Building Materials & Technology Promotion Council, New Delhi	SHRI R. K. CELLY SHRI B. ANIL KUMAR (<i>Alternate</i>)
Central Building Research Institute, Roorkee	SHRI SURESH CHAND SHRI S. S. JAIN (<i>Alternate</i>)
Central Public Works Department, New Delhi	SUPERINTENDING ENGINEER (S&S)
D. P. Garg & Company, Noida	SHRI S. M. GARG SHRI R. C. MALHOTRA (<i>Alternate</i>)
Delhi Development Authority, New Delhi	SHRI R. K. BHANDARI SHRI R. L. SHARMA (<i>Alternate</i>)
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Godrej & Boyce Manufacturer Co Limited, Mumbai	SHRI T. S. MURALI SHRI K. N. MODI (<i>Alternate</i>)
Hindalco Industries Limited, Distt. Sonbhadra	SHRI V. K. AGGARWAL SHRI BALKRISHAN AGARWAL (<i>Alternate</i>)
Indian Aluminium Company Limited, New Delhi	SHRI P. ANIL KUMAR SHRI P. A. KOHLI (<i>Alternate</i>)
Indian Institute of Architects, New Delhi	DR ABHIJIT RAY
J. H. Aluminium Pvt Limited, Chennai	SHRI J. JAYAPRAKASH SHRI J. RAGHURAM (<i>Alternate</i>)
M. C. Mowjee & Co Pvt Limited, Kolkata	SHRI SAHIB SINGH VIRDI SHRI SAJID MOWJEE (<i>Alternate</i>)
MECH (India) Industries, Delhi	SHRI SUDHIR BATRA
Ministry of Railways, Kolkata	CONTROLLER OF STORES
National Test House, Kolkata	SHRI D. K. KANUNGO SHRI S. P. KAR (<i>Alternate</i>)
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Plaza Locks, Delhi	SHRI RAJAN ARORA SHRI K. H. PREM (<i>Alternate</i>)
Tamil Nadu Housing Board, Chennai	SUPERINTENDING ENGINEER (QC) EXECUTIVE ENGINEER (QC) (<i>Alternate</i>)
BIS Directorate General	SHRI S. K. JAIN, Director and Head (CED) [Representing Director General (<i>Ex-officio</i>)]

Member Secretary
SHRI D. K. AGRAWAL
Joint Director (Civ Engg), BIS

Bureau of Indian Standards

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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